

What is claimed is:

1. A method for re-using an array of storage devices, comprising:
using firstly an array of storage devices to conduct read/write operations under control
of at least a first controller including providing metadata to each of said storage devices of
said array;

ascertaining that a failure has occurred;
discontinuing use of at least two of said storage devices of said array related to
conducting read/write operations based on the failure; and

using secondly said array of storage devices after said discontinuing step while
substantially avoiding writing previously stored data and/or parity to said at least two storage
devices that was present before the failure.

2. A method, as claimed in Claim 1, wherein:
the failure is a transient failure and is related to at least one of:
an array enclosure;
a back plane;
a cable;
said first controller;
an interface; and
software involved with operation of said first controller.

3. A method, as claimed in Claim 1, wherein:
said using secondly step includes making a determination related to being able to use
said array of storage devices including said at least two thereof.

4. A method, as claimed in Claim 3, wherein:
said making step includes checking whether one or more of said storage devices is
off-line.

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5. A method, as claimed in Claim 1, wherein:
said using secondly step includes modifying metadata on each of said storage devices.

6. A method, as claimed in Claim 1, wherein:
said using secondly step includes issuing a trust array command to said first controller that causes at least one of the following: a partition age metadata field to be synchronized on each of said storage devices of said array; writing all zeros in a primary dead partition map; and setting a partition status metadata field to initialized.

7. A method, as claimed in Claim 6, wherein:
said using secondly step includes determining whether each of said storage devices of said array is accessible after said issuing step.

8. A method, as claimed in Claim 7, wherein:
said using secondly step includes controlling re-use of said array when it is determined that no more than one of said storage devices of said array is off-line.

9. A method, as claimed in Claim 7, wherein:
allowing data and/or parity to be read by said first controller when more than one of said storage devices is off-line and reading said data and/or parity from said storage devices of said array that are on-line.

10. A method, as claimed in Claim 1, wherein:
said using secondly step includes controlling re-use of said array based on one of: a user determination and an automatic determination independently of the user.

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11. A method, as claimed in Claim 10, wherein:
said using secondly step includes generating a command by a host and transmitting
said command to said first controller.

12. A method, as claimed in Claim 11, wherein:
said command is initiated manually by the user of said array.

13. A method, as claimed in Claim 1, wherein:
said substantially avoiding writing previously stored data and/or parity includes
substantially avoiding restoring and/or reconstructing data and/or parity.

14. A system in which an array of storage devices are re-used after use of at least
one storage device of the array is discontinued based on a fault, comprising:

an array of storage devices relative to which read and write data transfers are
conducted;

5 a controller communicating with said array of storage devices for conducting
read/write operations; and

a host communicating with said controller that makes requests related to data to be
stored and data to be obtained from said array of storage devices;

10 wherein said host is used in generating a trust array command related to updating
metadata on each of said storage devices of said array after a fault occurs and after use of said
array was discontinued due to the fault.

15. A system, as claimed in Claim 14, wherein:
said trust array command is generated in response to input from a user of the system.

16. A system, as claimed in Claim 14, wherein:
said trust array command is generated independently of any reconstruction and/or
restoration of said array.

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17. A system, as claimed in Claim 14, wherein:
said host controls discontinuing use of said array of storage devices based on the fault
and subsequently said host receives an input that is used in generating said trust array
command.

18. A system, as claimed in Claim 14, wherein:
said trust array command causes at least one of the following: synchronizing the
partition age metadata field on each of said storage devices of said array; writing all zeros
associated with a primary dead partition map; and setting a partition status metadata field to
5 initialized.

19. A system, as claimed in Claim 14, wherein:
a determination is made by at least one of said controller and said host related to
whether one or more of said storage devices is off-line before said trust array command is
generated and a determination is made by at least one of said host and said controller related
5 to whether each of said storage devices of said array is accessible after said trust array
command is generated.

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